



Let $AC = x$. By similar triangles, we have $\frac{x}{AB} = \frac{FC}{CB}$ where AB is constant. Recall, the area of the triangle is given by $\frac{FC \cdot CB}{2}$.

From the proportion, we have $\frac{CB \cdot x}{AB} = FC$. Furthermore, $CB = AB - x$.

Therefore, the area of the triangle can be written as

$$\frac{(CB \cdot x) \cdot CB}{2 \cdot AB} = \frac{(AB - x) \cdot x \cdot (AB - x)}{2 \cdot AB} = \frac{x \cdot (AB - x)^2}{2 \cdot AB}$$

Where AB is a constant and x is the side of the square.